



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/065,021	09/11/2002	Artur Kurz	P6786.7US	7556
30008	7590	12/12/2005		
GUDRUN E. HUCKETT DRAUDT LONSSTR. 53 WUPPERTAL, 42289 GERMANY			EXAMINER CADUGAN, ERICA E	
			ART UNIT 3722	PAPER NUMBER

DATE MAILED: 12/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/065,021

Applicant(s)

KURZ ET AL.

Examiner

Erica E. Cadugan

Art Unit

3722

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 September 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date, <u>12/8/05</u> . |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____. | 6) <input type="checkbox"/> Other: _____. |

DETAILED ACTION

Drawings

1. New Figure 2 was received on 9/21/2005. This Figure 2 is approved.

Accordingly, the previous objections to the drawings have been overcome. Additionally, since the new Figure 2 has been approved, the previous issue with respect to the specification referencing previously-approved Figure 3 is now moot.

Claim Objections

2. Claim 17 is objected to because of the following informalities: in claim 17, each of lines 6 and 9, it appears that “, including” should be changed to --and-- to be grammatically correct. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
4. Claims 1-8 and 17 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Specifically, amended claim 1 sets forth a method including the steps of “continuing workpiece machining and direct tool changing into and from the second tool magazine by the second spindle during stocking of the first tool magazine” and “continuing workpiece machining and direct tool changing into and from the first tool magazine by the first spindle during stocking

Art Unit: 3722

of the second tool magazine”. Additionally, amended claim 17 sets forth a method including the steps of “continuing workpiece machining by the second spindle, including tool changing into and from the second tool magazine, during stocking of the first tool magazine; and continuing workpiece machining by the first spindle, including tool changing into and from the first tool magazine, during stocking of the second tool magazine”. These steps do not appear to have support in the specification as originally filed.

5. Claim 17 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 17, line 2 sets forth the limitation “the device”. This limitation lacks sufficient antecedent basis in the claim.

Claim Rejections - 35 USC § 102

6. Claims 1, 3, and 17, as best understood, are rejected under 35 U.S.C. 102(b) as being anticipated by JP-6-304835 (‘835).

‘835 teaches a “machine tool” having a base 12 (see Figures 1-2). The “machine tool” includes spindles 48 and 48a (see Figure 2) that are independently moveable in at least one axis, such as in the vertical direction by virtue of their separate vertical drives (including the ball screw drives, one of which that has a ball screw labeled “46(44) in Figure 2), and such as in the direction labeled as “Z” in Figures 1 and 3, by virtue of the separate ball screw drives including ball screws 42 as shown in Figure 2, for example. Each spindle has its own “magazine” 64, 64a (see Figures 1-2, for example).

Note that “stocking” of the tool magazines 64, 64a is carried out by adjacent tool swap devices 60 (see Figures 1-2, for example and also paragraph 0023), and that such “stocking” does not affect the machining operation carried out by the spindles (see Figures 1-2), particularly noting that a further exchange device 62, 62a is used to exchange tools between the tool magazines 64, 64a and their respective spindles 48, 48a (Figure 2, for example).

Specifically regarding claim 3, it is noted that the magazines 64, 64a must be indexed or “moved” into the appropriate position to be stocked, i.e., indexed to a position where the desired tools can be removed therefrom or attached thereto, as appropriate (see Figures 1-2).

Re claim 17, note that the “second” spindle 48 continues machining during stocking of the “first” magazine 64a by its respective tool swap device, and that, insofar as the language of claim 17 is understood, the “second tool magazine” 64 is also “accessed” by its respective tool swap device 60 during the machining operation carried out by the “second” spindle 48 (see Figures 1-2).

Claim Rejections - 35 USC § 103

7. Claims **1, 3, and 17** alternatively are, and claims **2 and 4-16** are, all as best understood, rejected under 35 U.S.C. 103(a) as being unpatentable over JP-6-304835 ('835) as applied to claims 1 and 3 above.

'835 teaches all aspects of the present invention as set forth in the above rejection based thereon.

Re claims 1, 3, and 17, in the alternative, it appears implicit via the discussion of “prompt” tool change and “processing effectiveness” in paragraphs 0002-0006, for example, and the provision of the independent magazines 64, 64a, the independent stockers 60, and the

Art Unit: 3722

independently moveable spindles 48, 48a, as described above, that the second spindle continues its machining, as desired, during stocking of the other magazine with one of the tool swap devices, and vice versa. However, '835 does not explicitly teach such.

Re claims 2 and 10, while teaches utilizing separate tool swap devices 60 to stock the tool magazines 64 and 64a as described above, '835 is silent as to how many operators are used to operate these tool swap devices.

Re claims 4-8 and 12-16, for example, '835 is silent about the specifics of the machining operations carried out, though it is noted that '835 teaches (see paragraphs 0007 and 0038, for example), and it would also be readily apparent from the provision of the tool exchanging system taught by '835 as well as the ability of the spindles to be moved independently, that the spindles can be utilized to perform a wide variety of machining operations in whatever order (i.e., simultaneous, alternating, etc.) as was desired by an end user. (Thus re claim 6, for example, it would depend on the operations desired to be performed by the end user as to whether the tools in the magazines were identical or not.).

Re claim 9, while '835 does explicitly teach the provision of the plural tool swap devices to stock the tool magazines as described above that would enable such an occurrence, '835 does not explicitly set forth that the stocking of the tool magazines 64 and 64a occurs "simultaneously" as claimed.

Re claim 11, it is noted that the magazines 64, 64a must be indexed or "moved" into the appropriate position to be stocked, i.e., indexed to a position where the desired tools can be removed therefrom or attached thereto, as appropriate (see Figures 1-2).

Art Unit: 3722

However, re claims 2 and 10, particularly absent any alleged criticality it would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized as many machine tool operators as was desired or expedient to an end user, and particularly re claim 10, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Note that it completely depends on the design choice of the workpiece(s) produced and the operations that an end user desires the device to perform (noting that '835 explicitly teaches that a wide variety of different operations can be performed, and thus teaches the flexibility of the machine, see paragraphs 0007 and 0038-0040, for example) as to whether the magazines are stocked at the same time, whether the spindles are operated simultaneously or alternately, or whether or not one spindle happens to be operating at the time that the other magazine is being stocked, or whether a tool change on one spindle happens to occur while the other magazine is being stocked. Note also that so long as the stocking of the magazine(s) occurs during the machining operation(s) as claimed (i.e., does not interfere with the machining operation(s)), it does not appear to matter to the present invention whether the machining is identical or different (see paragraphs 0004-0006 and 0026-0029 of the present specification).

Thus, at the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to have conventionally performed parallel identical machining on separate workpieces with the separate spindles, or to have conventionally used the separate spindles to perform alternately on one workpiece because Applicant has not disclosed that performing such machining provides an advantage, is used for a particular purpose, or solves

Art Unit: 3722

a stated problem. One of ordinary skill in the art, furthermore, would have expected '835's invention of stocking the magazines during machining to perform equally well whether or not the machining is the same or different, whether or not the tools stocked in the different magazines are the same or different, or whether or not one spindle is having its tool exchanged during stocking of another spindle, or whether or not one spindle happens to be in the process of machining while the magazine of the opposite tool spindle is being "stocked" because the salient function of the stocking occurring during the machining is unchanged in the modification.

Therefore, it would have been an obvious matter of design choice to have modified the teachings of '835 to have obtained the invention as specified in the claims.

Response to Arguments

8. Applicant's arguments filed September 21, 2005 with respect to the previous claim rejection of claim 17 under 35 USC 112, first paragraph (new matter) have been fully considered but they are not persuasive.

Examiner will also address these arguments to the extent that they apply to claim 1 as now amended (since claim 1 as amended and claim 17 contain similar limitations that are being held to be new matter). Claim 1 as amended sets forth the limitations "continuing workpiece machining and direct tool changing into and from the second tool magazine by the second spindle during stocking of the first tool magazine" and "continuing workpiece machining and direct tool changing into and from the first tool magazine by the first spindle during stocking of the second tool magazine". Similarly, claim 17 sets forth a method including the steps of "continuing workpiece machining by the second spindle, including tool changing into and from the second tool magazine, during stocking of the first tool magazine; and continuing workpiece

Art Unit: 3722

machining by the first spindle, including tool changing into and from the first tool magazine, during stocking of the second tool magazine”.

On page 6 of Applicant’s response, Applicant indicates that support for these limitations could be found in paragraphs 0011 and 0018. However, this is not persuasive. Paragraph 0011 indicates that the first spindle performs *machining* (not tool changing) during stocking of the second magazine, and that the second spindle performs machining during stocking of the first magazine. There is nothing in paragraph 0011 about tool changing.

Additionally, at best, paragraph 0018 teaches/implies that tool exchange for one spindle occurs while machining occurs with the other spindle (during the "main machining time"). There is nothing in paragraph 0018 about "stocking".

Accordingly, there is still no teaching in the specification as originally filed about changing a tool for one spindle while stocking the other magazine.

9. It is noted that the rejection of claims 1-3 as being anticipated by the Soltermann reference (US Pat. No. 5,971,904) has been withdrawn in light of the amendment to claim 1 received September 21, 2005.

10. Applicant's arguments filed September 21, 2005 with respect to the JP-6-304835 (hereinafter ‘835) reference have been fully considered but they are not persuasive.

It appears, via Applicant’s comments about the simultaneous operation of the spindles 26, 28 on page 11 of Applicant’s remarks, beginning at line 2, and also via Applicant’s remarks from page 12 set forth immediately below that Applicant may have misunderstood Examiner’s interpretation of the ‘835 reference. On page 12, Applicant asserted:

As pointed out above, the JP-document teaches that the two spindles 26, 28 are simultaneously in operation. A separate stocking of the tool magazines 64 while one of

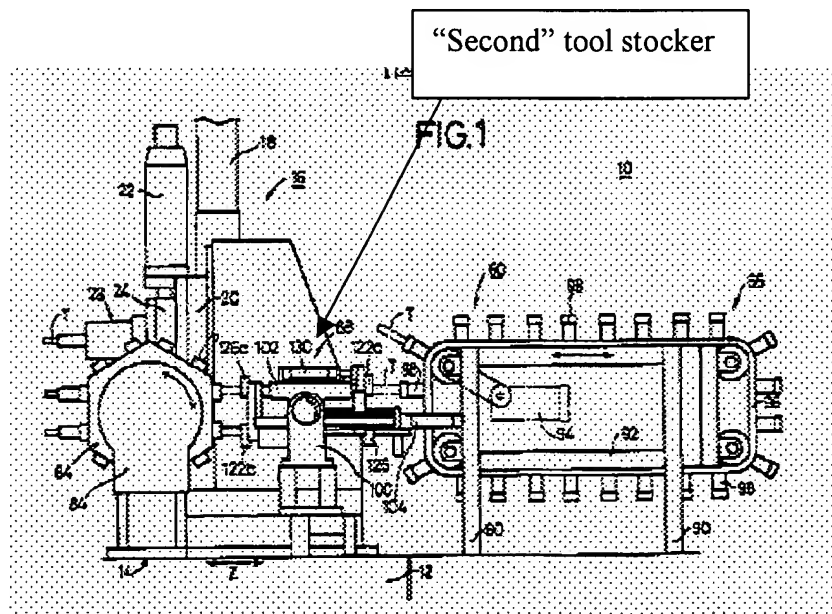
Art Unit: 3722

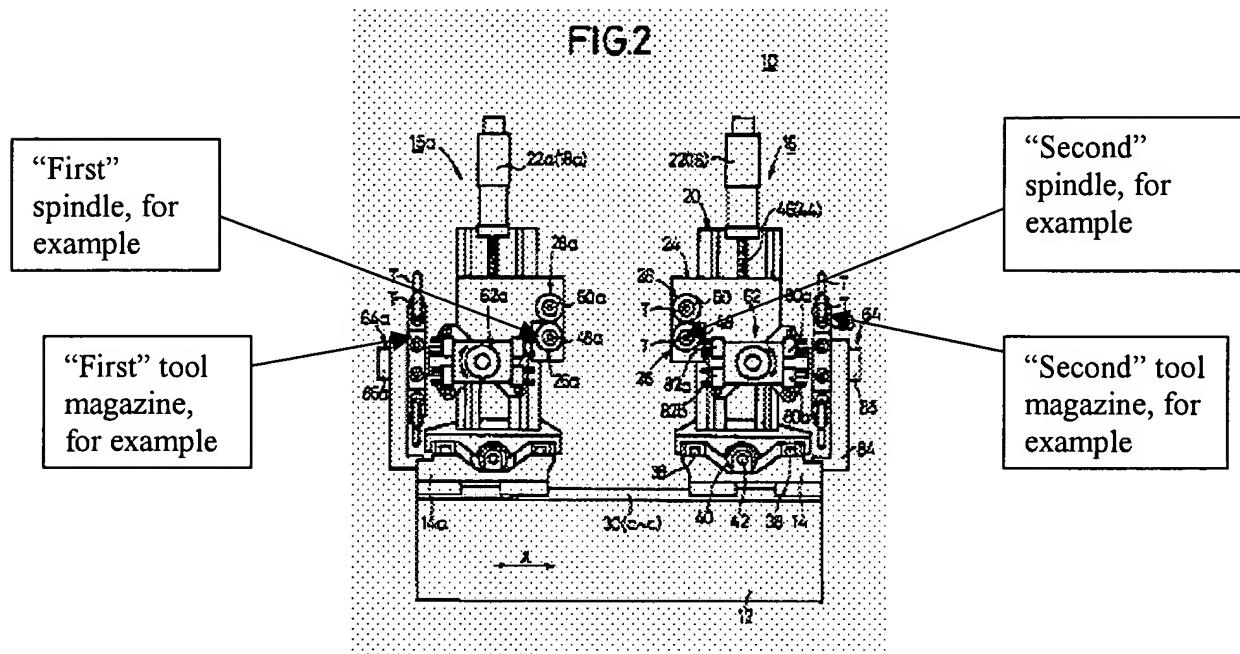
the spindles continues to operate is not disclosed. Stocking takes place independent of the tool magazines of the tool stocker 66.

Thus, it appears that Applicant has interpreted the spindles 26 and 28 as the claimed "first" and "second" spindles. However, as set forth in both the previous rejection based on '835 as well as the above rejection based thereon, spindles 48 and 48a can be considered the claimed "first" and "second" spindles.

It additionally appears that Applicant has interpreted the additional tool storage 66 as tool stocker(s) (see Applicant's remarks on page 11 of the response filed September 21, 2005).

However, as set forth in the rejection(s) based on '835, the tool stockers are elements 60 (one for each side 16, 16a per paragraph 0023), which actually perform the "stocking" action of placing new tools in magazines 64 and 64a from storage area(s) 66 and removing old tools from magazines 64 and 64a and putting them into storage area(s) 66.





For clarity, Examiner has reproduced Figures 1 and 2 from ‘835 above, and has labeled examples of the first and second tool spindles and magazines, as well as the second tool stocker (60). Note that paragraph 0023, as described in the rejection, teaches that another identical tool stocker 60 is provided for the opposite main body side 16a, and thus, there is additionally a “first” tool stocker associated with the first spindle 48a and the first tool magazine 64a.

Applicant asserts (on page 11 of the response) that “[I]n the machine of this JP document the problem according to the invention does not occur because the tool are not directly stocked into the tool magazine 64”. However, Examiner notes that the tools are directly stocked into the tool magazine 64 via the exchange device or stocker 60.

Applicant also indicates (page 11 of response) with respect to JP ‘835 that “[t]he spindles can therefore access the tool magazine 64 during stocking of the tool stocker 66 without any risk”. Examiner notes that the stocking of the storage area (called by ‘835 a “tool stocker”) 66

Art Unit: 3722

does not appear to bear any relevance to the present claims. Again, note that device 60 actually performs the claimed “stocking” operation.

Applicant also asserts (page 11 of response) that “[t]here is no need for stopping operation of the spindles for stocking as the stocking process is independent of the tool magazine”. Examiner notes that a stocking process wherein a tool is “stocked” to the magazines 64, 64a by the devices 60 is not “independent” of the magazines 64, 64a since it is the magazines 64, 64a that are being stocked.

Applicant also indicates that “[t]wo different devices are used for stocking (66) and for tool change (64) so that the method of the present invention is not anticipated”. Examiner agrees that two different devices are used for stocking and for tool change, in that the devices 60 serve to “stock” tools in their respective magazines 64a, 64 by placing tools to and removing tools from their respective magazines, and that tool exchange devices 62, 62a serve to perform a tool exchange between the spindles 48, 48a and the magazines 64, 64a. However, the relevance of this assertion to any present claim language is unclear.

Applicant makes a number of assertions about the frequency of tool changing operations that occur in the present invention, as well as the length of these tool changing operations (page 11 of response, paragraph beginning “[T]he present invention deals with...”). However, it is noted that no frequency or length of tool change has been set forth in the rejected claims.

Although the claims are interpreted in light of the specification, limitations from the specification (nor from Applicant’s remarks) are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Art Unit: 3722

Applicant additionally asserts that “[O]nly with the method of the present invention where each spindle has its own tool magazine is it possible to stock the first magazine of the first spindle while the second spindle is still able to machine workpieces and perform tool exchange with the second magazine so that the productivity of the machine tool is maintained at 50%”. However, Applicant’s attention is directed to the rejections (both above and in the preceding office action) based on ‘835 as well as to the reproduction of Figure 2 above, noting that the spindles on the main body 16a are associated with the tool magazine 64a and tool changer 62a and that the spindles on the main body 16 are associated with their own tool magazine 64 and tool changer 62, and thus it is indeed possible to use a stocker 60 to “stock” the first magazine 64a of the “first” spindle 48a (for example) while the second spindle 48 (located on the other main body 16) performs machining of the workpiece W (see Figures 1 and 2, and also the close up of Figure 3 that illustrates one of the tool stockers 60 in proximity to the , for example) and also while a tool exchange is performed with tool changer 62 between the second spindle 48 and the second magazine 64 (see Figure 2 especially).

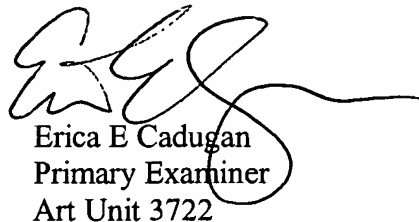
Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erica E. Cadugan whose telephone number is (571) 272-4474. The examiner can normally be reached on M-F, 6:30 a.m. to 4:00 p.m., alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Boyer D. Ashley can be reached on (571) 272-4502. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Art Unit: 3722

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Erica E Cadugan
Primary Examiner
Art Unit 3722

eec
December 8, 2005

Approved
EEC
12/8/05

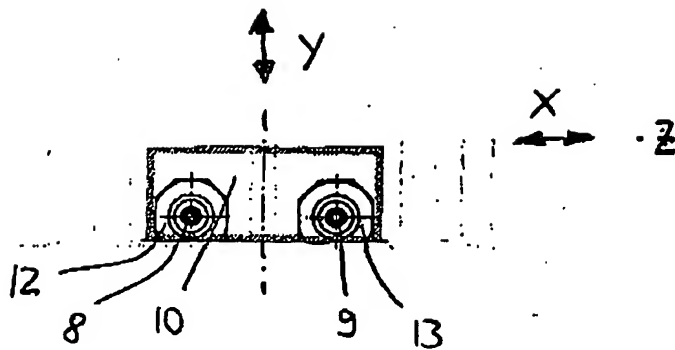


Fig. 2